

Custodian's
Copy

FOREST PROTECTION REQUIREMENTS REPORT
for
HOMESTEAD NATIONAL MONUMENT
December, 1939

prepared by
C. E. Shevlin
Associate Forester
Region Two

HOMESTEAD NATIONAL MONUMENT
HEATRICE, NEBRASKA

October 22, 1940

Memorandum to The Regional Director:

There is enclosed, Forest Protection Requirements Report, prepared by C. L. Shavlin, Associate Forester, forwarded to this office October 17, 1940. It has been learned that a Custodians copy, bearing the signatures of the Director, Regional Director, Chief of Forestry, and the Regional Historian, is in the Homestead National Monument files.

The second copy is returned to the Regional Office herewith.

Clarence W. Schultz
Superintendent

CHS/lm
Enc.
cc - E. A. Hummel

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
WASHINGTON

ADDRESS ONLY
THE DIRECTOR, NATIONAL PARK SERVICE

883-02

February 5, 1940.

MEMORANDUM for the Regional Director, Region II:

Reference is made to your memorandum of January 26 with which were enclosed three copies of the Forest Protection Requirements Report for Homestead National Monument.

We are very glad to have this description of the area and its fire protection problems. The report has received the concurrence of the Chief of Forestry and I am glad to approve it. Two copies are returned herewith as requested. I trust the recommendations contained in the report will be carried out in the protection and development of the area.

Director.

cc: R.F. II
Regional Office (Monument files)
Enclosure 1938312.

FOREST PROTECTION
REQUIREMENTS REPORT
for
HOMESTEAD NATIONAL MONUMENT
December, 1939

prepared by
C. E. Shevlin
Associate Forester

Recommended: Edward A. Kimmel Date: 1/25/40
(Coordinating Superintendent) Ky. Nat.

Concurred : Paul B. Blanner Date: 1-26-40
Adm. (Regional Director)

Concurred : J. C. Coleman Date: 2-3-40
(Chief of Forestry)

Approved: Paul B. Blanner
Director

Date: 2/7/40

CONTENTS

Page

Introduction.....	1
Secretarial Designation.....	1
General Description.....	1

SECTION 1

<u>Location and General Description.....</u>	1
Accessibility.....	1
Topography.....	1
Vegetative Cover.....	2
Percent and acreage of types.....	2
Fire Hazard.....	3
Fuel types, percent and acreage.....	3
Man caused fires.....	3
Public use.....	3
Fire Occurrence History.....	4

SECTION 2

<u>Present Protection Problems and Practices.....</u>	5
Administration.....	5
Personnel.....	5
Physical Protection Improvements.....	5
Fire Detection Service.....	5
Fire Suppression Equipment.....	5

SECTION 3

<u>Forest Fire Protection Conclusions and Summary.....</u>	6
Protection Personnel Requirements.....	6
Physical Forest Protection Requirements.....	6
Fire Suppression Equipment Requirements.....	6
Communication.....	6
Fire Presuppression Requirements.....	6
Priority Summary of Protection Needs & Cost.....	7

SECTION 4

<u>Forest Insect Problems and Control Requirements.....</u>	7
Photographs.....	8-10

Map

PREFACE

The purpose of this report is to present a fair and logical analysis of the fire protection problems and requirements for Homestead National Monument as they pertain to the protection of vegetative growth. The objective in this area is to restore and preserve, in a natural state, conditions as they existed within a period of several years after the Homestead was taken up. In order that this objective may be realized it is essential that, in addition to regular fire protection activities, special attention be given to the protection of new plantings, both of trees and native grasses.

FOREST PROTECTION REQUIREMENTS REPORT
for
HOMESTEAD NATIONAL MONUMENT
November, 1939

INTRODUCTION

Homestead National Monument, an area of 160 acres, was established January 3, 1936 by the Secretary of the Interior pursuant to authority vested in him by the Act of 1936. This particular quarter section of land was chosen by reason of the fact that it was the first homestead to be taken up under the Act of May, 1862. It is typical eastern Nebraska prairie land with deep soil capable of producing excellent vegetative growth.

At the present time the forest growth, consisting entirely of hardwoods, is restricted to approximately 35 acres along the banks of and immediately adjacent to Cub Creek, a small stream which nearly bisects the area in a meandering fashion. Originally the forest stand extended over about 40% of the area but logging and numerous fires have reduced the stand about half. The remainder of the area, which originally supported a heavy stand of native grasses, bluestem predominating, is now covered with various native grasses interspersed with weeds.

The entire area can be classed in the "low-medium" class of fire hazard. Dead and down material is practically non-existent on the forest floor and hence the principal hazard lies in grass fires. Previous to acquisition by the Government much of the land was under cultivation and consequently, fuel for grass fires was not abundant. However, with the restoration of original conditions the danger from this type of fire will be increased materially and under dangerous fire hazard conditions large sections could be burned over in a short period of time.

SECTION 1

LOCATION AND GENERAL DESCRIPTION

The Homestead National Monument is located in Gage County, Nebraska, 100 miles southwest of Omaha and 3½ miles northwest of Beatrice on Cub Creek. Nebraska State Highway No. 4 leads from Beatrice to the Monument and cuts diagonally across the North 40 in a northwesterly direction. A graded county road extends along the west boundary of the southwest 40. The remainder of the area is bounded by high quality farmland, which for the most part is intensively cultivated. The terrain is practically level with a slight rise in elevation toward the east. Cub Creek, a small

meandering stream enters the Monument at the northeast corner of the North "40" and continues in an extremely irregular course, crossing into private lands at times and finally leaving the area at the southwest corner. This stream floods annually and has caused a considerable amount of erosion.

No structures are now present on the area but it is understood that tentative plans call for the restoration of the original cabin, a museum and a service group which includes a custodian's dwelling.

Vegetative Cover - Approximately 22% of the area is covered with a hardwood forest, typical of this section of the country. Oak is the dominant species with a liberal sprinkling of elm, black walnut, hackberry, red maple, cottonwood, boxelder, Osage orange, and honey locust being present to complete the stand. While there are a limited number of large sized specimens present, the majority of the trees run from 6 to 12" in diameter. The deep rich soil is conducive to excellent growth and the presence of numerous stumps, many of which are of large diameter, testify to the excellence of the original stand. Intensive grazing has practically eliminated the understory and kept reproduction to a minimum. Protective measures during the past two years have, however, served to indicate that this condition will be corrected provided fires are kept out. In addition to the natural forest cover, 10,000 oak and hackberry seedlings were planted during the past year as part of the plan to bring the stand back to its original limits.

Practically all of the remaining 78% of the area supports various species of native grasses with some admixture of various kinds of weeds. These grasses are not the result of seeding but rather came in naturally when the land was retired from crops of wheat and corn two years ago. Present plans call for a heavy seeding of the native bluestem and when this has been accomplished the stand of grass will be much heavier with a corresponding increase in danger from grass fires. The approximate percentages and acreages of vegetative types are as follows:

Oak	18% (29 acres)
Black Walnut)
American Elm)
Cottonwood)
Hackberry)----- 4% (6 acres)
Red Maple)
Honey Locust)
Boxelder)
Osage orange)
Grassland	76% (122 acres)
Herbaceous	2% (3 acres)

Fire Hazard

- After a careful consideration of the factors involved it is believed that the rating given to Homestead National Monument should not be higher than "low-medium". Grass fires are the most serious problem and while such fires spread rapidly under hazardous weather conditions, the likelihood of occurrence is not great. "Burning off" is a common practice by the surrounding farmers but extreme care is used to prevent fires from spreading to adjoining properties. Therefore, the danger from fires originating outside the area is kept to a minimum.

Intensive grazing in the forested area and the practice of using all dead and down material for fuel has resulted in a clean forest floor with very little readily inflammable material present.

The approximate fuel types are rated as follows:

Very high rate of spread (areas in which one man can normally control a fire if he arrives one-half hour after it starts)	15% (24 A.)
High Hazard (areas in one-half to one hour control zone)	20% (32 A.)
Medium Hazard (areas in one to two hour control zone)	40% (64 A.)
Low Hazard (areas in two to four hour control zone)	25% (40 A.)

No authentic records relating to precipitation are available for the area but the generally excellent agricultural crops in the immediate vicinity are evidence of considerable rainfall. However, this locality, like many others in this section of the middle west, is subject to occasional severe and prolonged droughts such as occurred in 1939.

The danger from man-caused fires is not great. As previously stated, the farmers adjacent to the area are fire conscious and are very careful not to allow fires to spread to adjoining properties. While no figures are available regarding the number of visitors to the Monument, it is known that there were very few during 1939. Unquestionably there will be a great increase as development continues and the area becomes better known, but it is doubtful that this increase will create much added danger. Visitors can view practically the entire area from the road and since very few, if any, trails will be constructed, it is probable that most of the people will limit their visits to the museum and cabin.

Fire Occurrence

History

- No record of any fires occurring on the area is available. However, there is simple evidence that fires have occurred in the form of fire scars on the existing trees but it is also likely that those fires were deliberately set in line with the policy prevalent in this section of "burning off".

SECTION 2

PRESENT PROTECTION PROBLEMS AND PRACTICES

Homestead National Monument is at present under the administration of the Regional Office with no custodian appointed as yet. However, it is hoped that funds may be available so that this position can be filled within the next year. In the meantime it is obvious that no protection will be afforded the area other than that afforded by the possible presence of a small ERA crew.

Physical Protection Improvement

on the area.

- Aside from the roads previously mentioned, no physical improvements whatever exist

Fire Detection Service

will any ever be necessary since almost the entire area is visible from many points.

- No lookout stations or observation points of any kind are present on the area nor

Fire Suppression Equipment

months, April 1 to October 1, 1939, a small ERA crew worked on the area but at the termination of the program all tools were transferred.

- No equipment of any kind is now present on the Monument. For a period of six

SECTION 3

FOREST FIRE PROTECTION CONCLUSIONS & SUMMARY

Protection Personnel Requirements

- In spite of the fact that protection from fire is absolutely essential if this area is to be restored to its former state, no regular protection personnel other than a custodian is recommended. The small size of the area, ready accessibility, limited forest cover and low hazard from outside fires are factors which tend to make the fire protection problem a relatively simple one. Tentative plans for personnel include a temporary ranger position and while this will provide added protection, it is probable that the position will be filled principally during the period of the lowest fire hazard. During normal years the highest hazard exists during the spring and fall when the grasses are cured. For extended high hazard periods the employment of an emergency fire guard should be effected.

Physical Forest Protection Requirements

- A small complement of fire tools is needed for the suppression of any fires that may occur and a tool cache should be provided for the housing of these tools. It is recommended that a tool cache be included as part of the garage or storage building. The space provided should be partitioned off and a separate entrance door furnished for ready access. Pending the construction of such facility a standard metal portable tool cache should be provided.

Fire Suppression Equipment Requirements

- A minimum of fire suppression equipment to supply six men should be provided at the utility area for initial fire suppression action. While it is improbable that any serious fire will occur, it is essential that prompt initial action be taken since grass fires will, under certain conditions, spread rapidly.

Communication

- An existing telephone line follows State Highway No. 4 making it a simple matter to provide communication to Beatrice and the nearby farms in the event additional assistance is needed.

Fire Presuppression Requirements

* The most important requirement is that the custodian receive full instructions regarding the importance of fire protection and the necessity for prompt initial action. Instructions should also be given regarding

the action to be taken under normal fire emergencies and the proper method of combating fires. The custodian should solicit cooperation from the local farmers in preventing fires and in suppressing those that do occur. It is also essential that all fire tools be checked and repaired at the beginning of the spring and fall fire season and that all tools be correctly marked in accordance with instructions contained in the Manual of the Branch of Forestry.

Priority Summary of
Protection Needs and
Estimated Cost

Priority	Quantity	Equipment Item	Est. Cost
*1	2	Flappers	\$ 5.40
	2	Shovels	2.06
	1	Pulaski tool	2.25
	2	Melroe tool	4.30
	2	Backpack pumps	16.00
	2	Canvas waterhoses	1.10
	1	File - 12"	.15
	1	First aid packet	.90
2	1	Fire tool cache (metal)	20.00
		Total	\$ 52.15

*For immediate protection needs.

SECTION 4

FOREST INSECT PROBLEMS AND CONTROL REQUIREMENTS

Forest Insect Prob-
lems and Control Re-
quirements

The information at hand is too meager to make specific recommendations regarding insect problem and control requirements but it is not believed that any problem exists at this time. There is no evidence of infestations during the years previous to Government acquisition, nor have harmful forest insects been present during the past three years of Government ownership.



General view of almost the entire area showing forest growth along Cub Creek in the background. Cultivated section in the foreground is the result of seeding operations during the summer of 1939.



View of Cub Creek showing sparse hardwood growth.



Typical sparse forest cover with some new planting in the foreground. Intensive grazing has kept re-production to a minimum.



Many large stumps give evidence of excellent original forest cover. With protection from fire and grazing excellent vegetative growth can be expected.